High Voltage Power Supply

**EP Series**

- EP-2P2  +2kV, 2mA
- EP-2N2  -2kV, 2mA
- EP-5P1  +5kV, 1mA
- EP-5N1  -5kV, 1mA

Most compact design in its class

Power supplies for preamplifier are integrated (±15 V, ±5 V output)

Ultra low ripple noise of as low as 15 mVp-p

www.matsusada.com
**EP series**

2kV, 5kV

High Voltage Power Supply

EP series is high performance high voltage power supply for PMT, Electron multiplier application. Ultra compact size of just 8.35-inch(212 mm) width integrated HV power supply and power supply for preamplifier ±15 V and ±5 V. The ultra low ripple noise of as low as 15 mVp-p(HV output part) is suitable for PMT and various other applications. In addition, various digital control is also possible by selecting the -LGob option.

### FEATURES

- Power supplies for preamplifier are integrated (+15 V, ±5 V output)
- Low ripple 15 mVp-p(2 kV models HV output part)
- Ultra compact design of the best in its class
- Large and noticeable 4-digit digital meter
- Full protections

### LINEUP

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Output voltage</th>
<th>Output current</th>
<th>Ripple</th>
</tr>
</thead>
<tbody>
<tr>
<td>EP-2P2</td>
<td>0 to +2 kV</td>
<td>2 mA</td>
<td>15 mVp-p</td>
</tr>
<tr>
<td>EP-2N2</td>
<td>0 to -2 kV</td>
<td>2 mA</td>
<td>15 mVp-p</td>
</tr>
<tr>
<td>EP-5P1</td>
<td>0 to +5 kV</td>
<td>1 mA</td>
<td>50 mVp-p</td>
</tr>
<tr>
<td>EP-5N1</td>
<td>0 to -5 kV</td>
<td>1 mA</td>
<td>50 mVp-p</td>
</tr>
</tbody>
</table>

### SPECIFICATIONS

**Input voltage / current**

100-240 VAC±10 %, 50 / 60 Hz, single phase 0.5 A@100 VAC

**Output voltage control**

Front panel rotary encoder

**Regulation**

- Line : 0.005 % of maximum output for ±10 % input line change
- Load : 0.02 % of maximum output for 10 to 100 % load change

**Stability**

0.01 % / Hr

**Temperature coeff.**

70 ppm / °C

**Output display**

- Output voltage : 4-digit digital meter (accuracy : 0.5 %F.S.±1 dgt)
- Output current : 4-digit digital meter (accuracy : 0.5 %F.S.±1 dgt)

**Protection**

- Over voltage protection
  - Output voltage cut off at approx. 105 % of rated output
- Over current protection
  - Output current cut off at approx. 105 % of rated output

**Output connector**

SHV type receptacle

**Operation temp.**

0 to +40 °C

**Storage temp.**

-20 °C to +60 °C

**Humidity**

20 % to 80 %RH(no condensation)

**Accessories**

- AC input cable three phase 2.5 m length(1)
- Shielded HV output cable 2.5 m length(1)
- Instruction manual(1)

### SPECIFICATION FOR LOW VOLTAGE POWER SUPPLIES

<table>
<thead>
<tr>
<th></th>
<th>±5 V output</th>
<th>±15 V output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output voltage</td>
<td>±5 V ±5 %</td>
<td>±15 V ±5 %</td>
</tr>
<tr>
<td>Output current</td>
<td>500 mA</td>
<td>200 mA</td>
</tr>
<tr>
<td>Ripple</td>
<td>3 mVp-p</td>
<td>3 mVp-p</td>
</tr>
<tr>
<td>Regulation (for ±10% input line change)</td>
<td>±0.1 %</td>
<td>±0.1 %</td>
</tr>
<tr>
<td>Regulation (for 10 % load change)</td>
<td>±1 %</td>
<td>±0.5 %</td>
</tr>
<tr>
<td>Stability</td>
<td>±0.05 % / Hr</td>
<td>±0.05 % / Hr</td>
</tr>
<tr>
<td>Temperature coeff.</td>
<td>100 ppm / °C</td>
<td>50 ppm / °C</td>
</tr>
</tbody>
</table>

### INPUT CABLE

**CABLE TYPE 1 (Standard)**

125 V / 10 A

**CABLE TYPE 3 (Separate)**

(for the input of 200 V)

250 V / 10 A

**CABLE TYPE 4 (Separate)**

(for the input of 200 V)

250 V / 10 A
- **LGob : Optical Interface Board**
  - LGob : Optical Interface Board + 2 meters long optical cable
  - LGob(Fc5) : Optical Interface Board + 5 meters long optical cable
  - LGob(Fc10) : Optical Interface Board + 10 meters long optical cable
  - LGob(Fc20) : Optical Interface Board + 20 meters long optical cable
  - LGob(Fc40) : Optical Interface Board + 40 meters long optical cable

It is isolated by optical communication. It makes it possible to prevent malfunction caused by transient phenomenon such as surge, lightning, induction, and external noise due to perfectly isolated by optical fiber.

**DIMENSIONS inch(mm)**

<table>
<thead>
<tr>
<th>D</th>
<th>0.2(5)</th>
<th>0.2(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+2kV, -2kV output model</td>
<td>10.66 (270.8)</td>
<td>10.66 (270.8)</td>
</tr>
<tr>
<td>+5kV, -5kV output model</td>
<td>12.83 (325.8)</td>
<td>12.83 (325.8)</td>
</tr>
</tbody>
</table>

* Ethernet is a registered trademark of Xerox Corporation.
Customer Inquiry Sheet (EP series)

Please copy this page and above fax number after filling out form below.

☐ I would like
   ☐ A quotation   ☐ An explanation of product   ☐ A demonstration   ☐ To purchase
   ☐ Other ( )

☐ Give us your requirement / comment

☐ Please fill in below.

Address:

Company:

Dept.: Title:

Name: Tel:

Fax:

E-mail:

Manufacturer warranty

We warrant the specification, unless otherwise specified, at max. rated output after warm up, and scope of application is between 10% and 100% of max. rated output. We warrant that products contained in this catalog (hereinafter, the “Products”) are free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment thereof. However, the warranty period for X-ray detectors and X-ray source shall be either one (1) year from the date of shipment or 1,000 hours, whichever shorter. The above warranty shall not apply to any Product which, at our sole judgment, has been: i) Repaired or altered by persons unauthorized by us; or ii) Connected, installed, adjusted or used otherwise than in accordance with the instructions furnished by us (including being used in an inappropriate installation environment, such as in corrosive gas, high temperature and humidity). We are not liable for any loss, damage or failure of the Products after the shipment thereof caused by external factors such as disasters. We will not inspect, adjust or repair any of our power supply products in the field or at any customer site. If you suspect that there has been a power supply failure in the field, please inspect your whole unit by yourself in an effort to determine that the problem is, in fact, arising out of our power supply products. If it is found that the problem is arising out of such power supply product after inspection, please contact your local sales office for additional troubleshooting. A “Return Merchandise Authorization” is required in case the power supply must be sent back to the factory in Japan for inspection and repair. We, at our sole discretion repair or replace such defective products at no cost to the purchaser. We assume no liability to the purchaser or any third party for special, incidental, consequential, or other damages resulting from a breach of the foregoing warranty. This warranty excludes any and all other warranties not set forth herein, express or implied, including without limitation the implied warranties of merchantability or fitness for a particular purpose. The Products are not designed and produced for such applications as requiring extremely high reliability and safety, or involving human lives (such as nuclear power, aerospace, social infrastructure facility, medical equipment, etc.). The use under such environment is not covered by this warranty and may require additional design and manufacturing processes. No modification or supplement of this warranty shall be binding unless in writing and signed by a duly authorized officer of Matsusada. Matsusada reserves the right to make any changes in the contents of catalogs or specifications at any time without advance notice. Due to compelling reason such as unavailability of components used, products might be un available or unable to repair. The products specified in catalogs or specifications are designed for use by the person who has enough expertise or under the control of such person, and not for general consumers. Schematics of products shall not be submitted to users. Test result or test data for the products shall be available upon request with charge.

Make sure you read the specification in the latest catalog before you order. Contact nearby sales office for the latest catalog.

Please see the link below for the complete warranty terms

https://www.matsusada.com/site/warranty.html

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